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OF
ENVIRONMENTAL QUALITY

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November 9, 2011
FPU #12-063

Ms. Troy Kennedy
Remediation Portfolio Director
Honeywell International
Health, Safety, Environment and Remediation
101 Columbia Turnpike
Morristown, New Jersey 07962

Re: M52 OU2-Comments on the Honeywell Technical Memorandum-*Prioritization and Selection of Buildings for a Phase 2 Soil Gas-to-Indoor Air Vapor Intrusion Assessment* and Attachment 1 Work Plan prepared by CH2MHill for the Honeywell 34th Street Facility, Motorola 52nd Street Superfund Site dated August 23, 2011

Dear Ms. Kennedy:

ADEQ and EPA have reviewed the above referenced report and submit the following comments.

ADEQ Comments

1. Although the approach presented in the report has adequate rationale and is suitable for targeting a tiered effort in further risk evaluation due to indoor air intrusion, it was extremely difficult to correlate the soil gas sample locations to specific building proximity and BSVE operation wells. Table 1 of Attachment 4 would benefit from another header row identifying the building(s) which these locations would be most representative. Similarly, it would be helpful for Table 2 in the main body of the text to include a column identifying the distance of the sampling location to the nearest injection/extraction well and the nearest building(s) in proximity, and have them grouped accordingly. Identification of locations at the edge or outside the BSVE Target Treatment Area (TTA) would also be helpful. Correlation of these locations is important in identifying which ones are likely to be significantly influenced by the BSVE operation.

2. It would seem that the data reflects most locations to have achieved progress in fuel-based constituent knockdown. However, this is not always the case. Some locations have had no significant change or an increase, while others have higher concentrations in the shallower depth of the nested well set. Examples are PMW-10-U and PMW-2-U/M. It would be helpful for these locations to be identified for future observation and potential further corrective actions if needed.

3. For clarity purposes, an additional figure could be presented that depicts BSVE wells only (no piping runs) relative to the locations where soil vapor samples are collected and buildings are located indicated by building number.

4. A typo occurs on page 10 indicating a citation to Attachment 2 which is correctly found in Attachment 4.

5. Soil gas location P-47 does not show up in Table 2, but is depicted in Figure 13 near the northwestern perimeter of the BSVE TTA. Data is also presented for this location. Is this a typo?

6. First paragraph at top of page 12 states "these shall soil-gas monitoring well locations". Should be change to "these shallow....."

7. Figure 10 – CSM. There should probably also be a footnote (1) next to the arrows showing volatilization from groundwater to soil gas and volatilization from subsurface soil to soil gas, to show that soil and groundwater results will not be used to assess risk from indoor air (i.e., for the same reason that there is a footnote (1) next to volatilization from LNAPL to soil gas).

8. The document does not present the criteria that will be used to determine whether the results of the Phase 2 VI assessment show that VI concerns exist.

The remaining ADEQ comments pertain to the Work Plan (included as Attachment 1 in the Technical Memorandum).

9. In general, the Work Plan incorporates a reasonable, valid approach and methods that are consistent with standard industry practice. The level of detail given is sufficient for evaluation purposes. The document would benefit from having a short (one page or less) summary of the site-specific conceptual site model that included type of contamination, depth to contamination, soil type, building slab type, description of building ventilation, exposure scenarios, etc. Much of this information is already present in Section 5 of the memo on building selection and could readily be summarized in a paragraph or two of text for inclusion in the Work Plan. Also, a decision tree or evaluation flow diagram would be helpful.

10. **Section 1.2.3 Chemical Use at the Facility and Potential Site-Related Chemical Sources** Bullet three mentions Mercury historically used in manometers. What is the rationale for on including mercury vapors or organic mercury compounds?

11. **Section 2.1, Table 2-1** For the seven buildings of interest, the total number of samples are 23 indoor air, 19 sub-slab soil gas, and 13 outdoor (ambient) air. No rationale is given for the number of samples selected, based on building footprint, zones within the buildings, degree of homogeneity in the contaminant plume, or other factors. Soil gas typically has far greater spatial variability than indoor or outdoor air, so it is expected that

more sub-slab soil gas samples would be required for characterization. Alternatively, large volume sampling could be considered. The number of ambient air samples needed typically to characterize area background levels is one per building or one per day of sampling unless local sources are present. Please provide a rationale for the number of samples of each type.

12. **Section 2.1, Table 2-2** The list of CVOCs does not include 1,2-dichloroethylene (1,2-DCE), which is part of the degradation pathway from PCE to vinyl chloride. Appropriate DCE isomers should be added to the list of CVOCs.

13. The footnotes in **Table 2-2** indicate that petroleum hydrocarbons are used at the facility and therefore will not be included in the assessment. Please indicate in which buildings these compounds are used. For any building where one or more of these compounds are not used, include BTEX and naphthalene, as appropriate, on the list of compounds to be analyzed.

14. **Section 2.4** No rationale is given for collecting sub-slab soil gas samples over a 24 hour period. Unless there is some source of temporal variability at the site, shorter sampling periods (e.g., 1 minute) would be acceptable per the recently published ASTM 7663-11 soil gas standard. No mention is made of vacuum leak checks, only helium leak checks. The SOP included as an appendix, however does mention vacuum leak checks (section 6.1). The Work Plan should state that 100% of the sampling systems will under a vacuum leak check, consistent with ASTM 7663-11.

15. The helium shroud (see Figure 9 of the SOP included as an appendix) only encloses the sampling location (probe) at the slab surface and does not enclose the entire sampling system (canister, etc.). If vacuum leak checks are not performed, a larger enclosure that encloses the entire sampling system should be used if possible.

16. The Work Plan indicates that a RKI Eagle multi-gas meter will be used whereas the SOP discusses use of a GEM2000 (see 6.2.8 of the SOP).

17. **Table 3-1** Reporting limits are given in units of mass per volume ($\mu g/m^3$). Values are consistent from compound to compound and are 0.1 or 0.5 depending on the analytical option. This is almost certainly in error and presumably the units should be listed as ppbv (gas calibration standards typically have equivalent concentrations for various compounds, not equivalent mass per volume). Please confirm the units with the analytical laboratory.

EPA Comments
EPA comments are included in Attachment 1.

For questions regarding ADEQ's comments, please feel free to contact me at (602) 771-4197 or email ***stonebrink.brian@azdeq.gov*** or contact Jeanene Hanley at (602) 771-4314 ***hanley.jeanene@azdeq.gov.*** For questions regarding EPA's comments, please contact Martin Zeleznik at (415) 972-3543 or ***email zeleznik.martin@epa.gov***

Sincerely,

Brian Stonebrink

Brian Stonebrink
Project Manager
Federal Projects Unit
ADEQ

cc: Tasha Lewis, CH2MHill (via electronic)
Jeanene Hanley, ADEQ (via electronic)
Will Neese, URS (via electronic)
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Bart Eklund, URS (via electronic)
Joellen Meitl, ADEQ (via electronic)
Martin Zeleznik, EPA (via electronic and hardcopy)
Gerald Hiatt, EPA (via electronic)
Janet Rosati, EPA (via electronic)
Sue Kraemer, Shaw (via electronic for Repository's)
Mary Moore, Lindon Park Neighborhood Association (via electronic and hardcopy)
Project and Reading File

Attachment 1- EPA Comments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

October 25, 2011

Brian Stonebrink
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, AZ 85007

Subject: EPA Comments on the Review of Prioritization and Selection of Buildings for a Phase 2 Soil Gas-to-Indoor Air Vapor Intrusion Assessment Technical Memorandum
Honeywell 34th Street Facility, Motorola 52nd Superfund Site, Phoenix, Arizona

Dear Mr. Stonebrink:

EPA is providing comments on Review of Prioritization and Selection of Buildings for a Phase 2 Soil Gas-to-Indoor Air Vapor Intrusion Assessment Technical Memorandum Honeywell 34th Street Facility, Motorola 52nd Superfund Site, Phoenix, Arizona dated August 23, 2011. We offer the following comments on the technical memorandum and do not hesitate to contact me with any questions or concerns about this letter or any other matter. I can be reached at (415) 972-3543 or email at zeleznik.martin@epa.gov.

Sincerely,

Martin Zeleznik
Remedial Project Manager

cc: Janet Rosati, EPA (via electronic copy only)
Leana Rosetti, EPA (via electronic copy only)
Sue Kraemer, Shaw Environmental (via electronic copy only)
Site File

Review of Prioritization and Selection of Buildings for a Phase 2 Soil Gas-to-Indoor Air Vapor Intrusion Assessment Technical Memorandum
Honeywell 34th Street Facility, Phoenix, Arizona

GENERAL COMMENTS

1. Assessment of the Ventilation Systems: The building survey approach presented does not include adequate information on assessment of the ventilation systems. The assessment should evaluate the number of ventilation zones and how air is handled in each zone. EPA did review this on the Building Automation System during our visit. Copies of the Ventilation Diagrams for each building should be including with the building surveys. In addition the building survey forms included should be supplemented with the attached EPA Indoor Air Quality Short Form.

2. Pictures of the ventilation system and the proposed sampling locations should be provided to EPA prior to sampling.

3. Table 3-2 includes sub-slab screening values that are not conservative. While attenuations on the order of 1000 times are seen typically between sub-slab soil vapor and indoor air, attenuation factors as low as 10 can be seen in tightly sealed, unventilated buildings.

4. Outdoor Air Samples – Because this is not an outdoor air study, sampling locations should not be constrained to breathing height. Also outdoor sampling locations should be biased to be near representative air handlers' outdoor air intakes if practical.

SPECIFIC COMMENTS

1. Page 12, first paragraph, last sentence: The derivation of the Sitewide attenuation factor of 1.8E-04 should be shown in the report, possibly on Table 6 of Attachment 4.

2. Page 14, Section 5.4.4, second paragraph: The paragraph indicates that only Buildings 101 and 102 were retained as primary BOIs inside or adjacent to the TTA. Building 302 which was also retained as a BOI, straddles the TTA boundary and should also be listed.

3. Page 15, Section 5.4.5: This paragraph discusses Step 5 which compares BSVE soil-gas data to the SGHHSLs. Figure 28 and Table 3 in Attachment 4 indicate that adjacent to Building 202, TCE concentrations in samples collected from PMW-2 exceeded the SGHHSL (5,100 $\mu g/m^3$) at 25 feet (24,000 $\mu g/m^3$) and were greater than 50% of the SGHHSL at 10 feet (2,800 $\mu g/m3$). Page 6 of this document states, "If the soil gas results are greater than or equal to 10% of the industrial SGHHSL, building surveys would be performed." Based on these considerations, it appears that Building 202 should be a primary BOI. Additional rationale should be provided for not including Building 202 as a BOI.

Figure Comments

1. Figure 5, Future Land Use: It would be helpful if a note explaining "Public/Quasi-Public" use was included in the legend.

2. Figure 9, Summary of Potential Sources: The "Ground Disposals in Area 1 and 4" listed as the number 11 of the Key Potential Source Area should be colored orange based on the "Notes." We assumed they are "boxes" numbered with 20 and 15. Also, the "~" symbol should also be explained in the legend.

3. Figure 17, Decision Logic for Identifying and Prioritizing Buildings for Phase 2 Vapor Intrusion Assessment: The blue box in Step 1 should be "Preliminary BOI" rather than "Primary BOI."

Attachment 1 Comments

1. Page 2-1, Section 2.1, Table 2-1: This table lists the number of proposed samples to be collected for Primary BOIs. The indoor air and subslab soil gas sampling locations were discussed during a site walk with EPA and ADEQ on June 19 and 20. A brief rationale should be provided for the selected of sampling location in the work plan or indicate that the rationale will be provided following the building survey, which the report states may optimize the sampling location.

2. Page 2-4, Section 2.4, third paragraph: It is stated that the subslab samples will be collected over a 24 hour period. This appears to be a typographical error as other areas indicate the subslabs will be grab samples, which would be more consistent with the leak detection method. Also, please confirm a 6-liter canister is proposed versus a smaller canister.

3. Page 2-5, Section 2.7, third paragraph, second sentence: The sentence states that the "pressure differential monitoring will be briefly interrupted (less than 1 hour) while a subslab soil gas sample is collected from the probe. Section 2.4, however, states that the subslab soil gas samples will be collected over a 24-hour period in 6-liter canisters. According to the SOP (Appendix D), for 24-hour sampling an additional subslab probe will be installed solely for pressure differential monitoring purposes. Please clarify if two probes are being installed.

4. Page 3-5, Section 3.7, Table 3-1: The table needs a note explaining "a".

5. Page 3-65, Section 3.7, first bullet: The QA/QC designation "EB" for equipment blanks is not really "blind" to the laboratory.

HVAC Checklist - Short Form

Building Name: _____ Address: _____

Completed by: _____ Date: _____ File Number: _____

Sections 2, 4 and 6 and Appendix B discuss the relationships between the HVAC system and indoor air quality.

MECHANICAL ROOM

- Clean and dry? _____ Stored refuse or chemicals? _____
- Describe items in need of attention _____

MAJOR MECHANICAL EQUIPMENT

- Preventive maintenance (PM) plan in use? _____

Control System

- Type _____
- System operation _____
- Date of last calibration _____

Boilers

- Rated Btu input _____ Condition _____
- Combustion air: is there at least one square inch free area per 2,000 Btu input? _____
- Fuel or combustion odors _____

Cooling Tower

- Clean? no leaks or overflow? _____ Slime or algae growth? _____
- Eliminator performance _____
- Biocide treatment working? (list type of biocide) _____
- Spill containment plan implemented? _____ Dirt separator working? _____

Chillers

- Refrigerant leaks? _____
- Evidence of condensation problems? _____
- Waste oil and refrigerant properly stored and disposed of? _____

HVAC Checklist - Short Form

Building Name: _____ Address: _____

Completed by: _____ Date: _____ File Number: _____

AIR HANDLING UNIT

- Unit identification _____ Area served _____

Outdoor Air Intake, Mixing Plenum, and Damper

- Outdoor air intake location _____
- Nearby contaminant sources? (describe) _____
- Bird screen in place and unobstructed? _____
- Design total cfm _____ outdoor air (O.A.) cfm _____ date last tested and balanced _____
- Minimum % O.A. (damper setting) _____ Minimum cfm O.A. $\frac{\text{(total cfm x minimum \% O.A.)}}{100}$ = _____
- Current O.A. damper setting (date, time, and HVAC operating mode) _____
- Damper control sequence (describe) _____
- Condition of dampers and controls (note date) _____

Fans

- Control sequence _____
- Condition (note date) _____
- Indicated temperatures supply air _____ mixed air _____ return air _____ outdoor air _____
- Actual temperatures supply air _____ mixed air _____ return air _____ outdoor air _____

Coils

- Heating fluid discharge temperature _____ ΔT _____ cooling fluid discharge temperature _____ ΔT _____
- Controls (describe) _____
- Condition (note date) _____

Humidifier

- Type _____ if biocide is used, note type _____
- Condition (no overflow, drains trapped, all nozzles working?) _____
- No slime, visible growth, or mineral deposits? _____

HVAC Checklist - Short Form

Building Name: _____ Address: _____

Completed by: _____ Date: _____ File Number: _____

DISTRIBUTION SYSTEM

Zone/ Room	System Type	Supply Air		Return Air		Power Exhaust		
		ducted/ unducted	cfm*	ducted/ unducted	cfm*	cfm*	control	serves (e.g. toilet)

Condition of distribution system and terminal equipment (note locations of problems)

- Adequate access for maintenance? _____
- Ducts and coils clean and obstructed? _____
- Air paths unobstructed? supply _____ return _____ transfer _____ exhaust _____ make-up _____
- Note locations of blocked air paths, diffusers, or grilles _____
- Any unintentional openings into plenums? _____
- Controls operating properly? _____
- Air volume correct? _____
- Drain pans clean? Any visible growth or odors? _____

Filters

Location	Type/Rating	Size	Date Last Changed	Condition (give date)

HVAC Checklist - Short Form

Building Name: _____ Address: _____

Completed by: _____ Date: _____ File Number: _____

OCCUPIED SPACE

Thermostat types _____

Zone/ Room	Thermostat Location	What Does Thermostat Control? (e.g., radiator, AHU-3)	Setpoints		Measured Temperature	Day/ Time
			Summer	Winter		

Humidistats/Dehumidistats type _____

Zone/ Room	Humidistat/ Dehumidistat Location	What Does It Control?	Setpoints (%RH)	Measured Temperature	Day/ Time

- Potential problems (note location) _____

- Thermal comfort or air circulation (drafts, obstructed airflow, stagnant air, overcrowding, poor thermostat location)

_____

_____

- Malfunctioning equipment _____

- Major sources of odors or contaminants (e.g., poor sanitation, incompatible uses of space)

_____